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| APPLICATION NO | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO | CONFIRMATION NO |
|----------------|-------------|----------------------|--------------------|-----------------|
| 09 718,669 | 11 22 2000 | Po-Hao Yuan | 55413 | 2455 |

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EXAMINER

NGUYEN, DILINH P

ART UNIT PAPER NUMBER

2814

DATE MAILED: 05 27 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/718,669

Applicant(s)

YUAN ET AL

Examiner

DiLinh Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s) _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umehara et al. (U.S. Pat. 6268644) and Tanaka et al. (U.S. Pat. 6265762) in view of Nakamura et al. (U.S. Pat. 6060770).

Umehara et al. disclose a semiconductor package (cover fig., column 3, lines 55 et seq.) comprising:

- a semiconductor chip 13 having:

- a plurality of I/O pads 13a arranged along the sides thereof; and

- a plurality of dummy pads 16 arranged on the corners thereof;

- a tape carrier 12 having a plurality of side-situated lead bonding areas 12a and corner-situated lead bonding areas 18 surrounding the device;

- a set of inner leads, including:

- a group of I/O leads 14, which are bonded between the respective I/O pads on the semiconductor chip and the side-situated lead bonding areas on the tape carrier, so as to allow the semiconductor chip to be electrically connected to the tape carrier by the I/O leads; and

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a groups of dummy leads 17, which are bonded between the respective dummy pads on the semiconductor chip and the corner-situated lead bonding areas on the tape carrier.

Umehara et al. fail to disclose the group of dummy leads provide firm support to the corners of the semiconductor chip; and the tape carrier having a device hole for accommodating the chip therein.

Tanaka et al. disclose a semiconductor device (fig. 17) comprising a supporting plate 8 more firmly by fixing the four corners of the supporting plate 8 with the dummy leads 20 (column 9, lines 36-38). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Umehara et al. to provide firm support to the corners of the semiconductor chip, as shown by Tanaka et al.

Tanaka et al. fail to disclose the tape carrier having a device hole for accommodating the chip therein; and the dummy leads hold the chip in position with respect to the tape carrier and to enhance mechanical strength of the tape carrier package structure.

Nakamura et al. disclose a tape carrier having a device hole 8 for accommodating the chip 2 therein (fig. 5, column 6, lines 23-25); and a plurality of dummy pads 6b hold the semiconductor chip in position with respect to the tape carrier and to enhance mechanical strength of the tape carrier package structure (cover fig., column 5, lines 64-67). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Umehara et al.

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and Tanaka et al. to hold the chip in position with respect to the tape carrier and to enhance mechanical strength of the tape carrier package structure, as shown by Nakamura et al.

- Regarding claims 2, 7 and 10, it would have been obvious to use the same technique for TAB structure.
- Regarding claims 3, 8 and 11, it would have been obvious matter of design choice to apply the technique to any semiconductor chip including LCD driver chip.
- Regarding claims 4, 9 and 12, it is known in the art to use Al as a contact pads and it would have been obvious to do so.
- Regarding claims 5-6, Umehara et al. disclose the dummy leads are spaced at substantially the same pitch as the I/O leads.

Response to Arguments

Applicant's arguments filed 3/28/03 have been fully considered but they are not persuasive.

The applicant argues that Umehara fails to teach or suggest a group of dummy leads which are bonded between dummy pads on the chip and corner situated lead bonding areas on the tape carrier to provide firm support to the corners of the chip, so as to hold the chip in position with respect to the tape carrier and to enhance mechanical strength of the tape carrier package structure.

Umehara discloses a groups of dummy leads 17, which are bonded between the respective dummy pads on the semiconductor chip and the corner-situated lead

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bonding areas on the tape carrier. Since Umehara discloses claimed structural features. Therefore, the package inherently provide firm support to the corners of the chip, so as to hold the chip in position with respect to the tape carrier and to enhance mechanical strength of the tape carrier package structure.

Tanaka et al. disclose a semiconductor device (fig. 17) comprising a supporting plate 8 more firmly by fixing the four corners of the supporting plate 8 with the dummy leads 20 (column 9, lines 36-38). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Umehara et al. to provide firm support to the corners of the semiconductor chip, as shown by Tanaka et al.

Therefore, Umehara et al. or Umehara et al. combine with Tanaka et al. disclose the claimed invention.

In response to applicant's argument that the Tanaka and Nakamura references can not combined with Umehara to produce the Applicants' claimed invention, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DiLinh Nguyen whose telephone number is (703) 305-6983. The examiner can normally be reached on 8:00AM - 6:00PM (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

DLN
May 20, 2003

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